MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The REVIEW for September, 1894, is based on reports from 3,475 stations occupied by regular and voluntary observers. These reports are classified as follows: 149 reports from Weather Bureau stations; 41 reports from U. S. Army post surgeons; 2,506 monthly reports from State Weather Service and voluntary observers; 32 reports from Canadian stations; 223 reports through the Southern Pacific Railway Company; 476 marine reports through the co-operation of the Hydrographic Office, Navy Department, and "New York Herald Weather Service;" monthly reports from 40 U. S. Life-Saving stations; 8 reports from navigators on the Great Lakes; monthly reports from local services established in all States and Territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

The WEATHER REVIEW for this month has been prepared under the general editorial supervision of Prof. Cleveland Abbe. Unless otherwise specifically noted, the text is written by the editor, but the statistical tables are furnished by the Division of Records and Meteorological Data, in charge of Mr. A. J. Henry, acting chief of that division.

CHARACTERISTICS OF THE WEATHER FOR SEPTEMBER, 1894.

The most prominent features of the month of September were the hurricane which entered the Windward Islands on the 20th, passed over Cuba on the 24th, and was moving northeastward south of Cape Cod on the 30th; the dry and hot weather which generally prevailed over the United States, but which was gradually brought to an end by a series of local rains; the remarkable series of local tornadoes that prevailed on the 21st in the Northwest, and which have been made the subject of a special discussion by Prof. H. A. Hazen.

ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers not reduced to standard gravity and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), during September, 1894, is shown by isobars on Chart II. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border. This Chart also gives the so-called resultant wind directions for this month, based on the data given in Table IX of this REVIEW.

During the current month of September pressures have been highest, 30.14 at St. Vincent, 30.13 at Halifax, Yarmouth, and Block Island, and 30.11 at Key West; lowest, 29.86 at St. Vincent, and still lower to the northward. The low area of the Gulf of California is shown by the averages, 29.85, at Tucson and, 29.79, at Yuma.

The normal distribution of atmospheric pressure and normal resultant wind direction for the month of September were approximately shown on Chart V of the REVIEW for September, 1893, as computed by Prof. H. A. Hazen, and are not now reproduced. As compared with the normal for September, the mean pressure for the current month was above the normal in New England and Nova Scotia, but below the normal in the Lake region, Northwest, Manitoba, and Saskatchewan. The maximum deficit was 0.11, at Pierre, S. Dak.

As compared with the preceding month of August, the pressures, reduced to sea level, show a maximum fall of 0.14 at St. Vincent and 0.11 at Key West, and a maximum rise of 0.14 at Eastport.

DIURNAL VARIATIONS.

The systematic periodic diurnal variations of pressure are shown by the hourly means given in Table VI.

AREAS OF HIGH AND LOW PRESSURE.

The following sections give some details as to the phenomena attending the individual areas of high and low pressure. The storm warnings officially issued by the Weather Bureau either through the general forecast official at Washington, or by the respective local forecast officials, are enumerated in connection with the respective areas of disturbance.

MOVEMENTS OF CENTERS.

The following table shows the date and location of the center at the beginning and ending of each area of high or low pressure that has appeared on the U. S. Weather Maps during the month, together with the average daily and hourly velocities. The monthly averages will differ according as we consider each path as a distinct unit, or give equal weight